











Ei =	16.283	keV						$\Delta E_g$	$\Delta E_t$
Cryst	Refl	EB	$\Theta_B$	$\int IR d\Theta$	Width	$Ei \cot\Theta$	$\Delta E$	2m, 50μm	2m, 50μm
	(h,k,l)	[keV]	[°]	[μrad]	[μrad]	[meV/μrad]	[meV]	[meV]	[meV]
Sapph	(1,9,16)	16.257	86.74	2.922	2.6	0.928	2.41	11.6	11.85
				Equiv. Refl.: (1,-10,-16), (9,1,-16), (9,-10,16), (10,-1,-16), (10,-9,16), (-1,10,16), (-1,-9,-16), (-9,10,-16), (-9,-1,16) (-10,1,16), (-10,9,-16)					
Quartz	(12,-2,1)	16.265	87.29	2.884	2.5	0.77	1.96	9.63	9.83
				Equiv. Refl.: (12,-10,-1), (-2,12,-1), (-2,-10,1), (-10,12,1), (-10,-2,-1)					
LiNbO <sub>3</sub>	(2,4,-32)	16.09	81.18	2.693	2.8	2.527	7.08	31.58	32.36
				Equiv. Refl.: (4,-6,-32), (6,-4,-32), (-2,6,-32), (-4,-2,-32), (-6,2,-32)					
LiNbO <sub>3</sub>	(2,-6,32)	16.09	81.18	2.667	2.8	2.527	7.08	31.58	32.36
				Equiv. Refl.: (4,2,32), (6,-2,32), (-2,-4,32), (-4,6,32), (-6,4,32)					
LiNbO <sub>3</sub>	(2,-12,-10)	16.117	81.8	2.183	2.7	2.346	6.3	29.32	29.99
				Equiv. Refl.: (10,2,-10), (12,-2,-10), (-2,-10,-10), (-10,12,-10), (-12,10,-10)					
LiNbO <sub>3</sub>	(0,-4,34)	16.189	83.85	2.166	2.9	1.753	5.04	21.92	22.49
				Equiv. Refl.: (4,0,34), (-4,4,34)					
LiNbO <sub>3</sub>	(0,4,-34)	16.189	83.85	2.127	2.9	1.753	5.04	21.92	22.49
				Equiv. Refl.: (4,-4,-34), (-4,0,-34)					
LiNbO <sub>3</sub>	(2,10,10)	16.117	81.8	2.091	2.7	2.346	6.3	29.32	29.99
				Equiv. Refl.: (10,-12,10), (12,-10,10), (-2,12,10), (-10,-2,10), (-12,2,10)					
LiNbO <sub>3</sub>	(1,-12,4)	16.135	82.28	2.065	2.6	2.208	5.74	27.6	28.19
				Equiv. Refl.: (11,1,4), (12,-1,4), (-1,-11,4), (-11,12,4), (-12,11,4)					
LiNbO <sub>3</sub>	(1,11,2)	16.061	80.52	2.062	2.5	2.718	6.88	33.97	34.66
				Equiv. Refl.: (11,-12,2), (12,-11,2), (-1,12,2), (-11,-1,2), (-12,1,2)					
LiNbO <sub>3</sub>	(1,-12,-2)	16.061	80.52	2.049	2.5	2.718	6.88	33.97	34.66
				Equiv. Refl.: (11,1,-2), (12,-1,-2), (-1,-11,-2), (-11,12,-2), (-12,11,-2)					
LiNbO <sub>3</sub>	(6,7,8)	16.073	80.79	1.984	2.5	2.64	6.51	33	33.63
				Equiv. Refl.: (7,-13,8), (13,-7,8), (-6,13,8), (-7,-6,8), (-13,6,8)					
LiNbO <sub>3</sub>	(6,-13,-8)	16.073	80.79	1.971	2.5	2.64	6.51	33	33.63
				Equiv. Refl.: (7,6,-8), (13,-6,-8), (-6,-7,-8), (-7,13,-8), (-13,7,-8)					
LiNbO <sub>3</sub>	(1,11,-4)	16.135	82.28	1.97	2.6	2.208	5.74	27.6	28.19
				Equiv. Refl.: (11,-12,-4), (12,-11,-4), (-1,12,-4), (-11,-1,-4), (-12,1,-4)					
LiNbO <sub>3</sub>	(4,-12,-14)	15.992	79.15	1.967	2.3	3.121	7.33	39.01	39.69
				Equiv. Refl.: (8,4,-14), (12,-4,-14), (-4,-8,-14), (-8,12,-14), (-12,8,-14)					
LiNbO <sub>3</sub>	(4,9,4)	16.135	82.28	1.962	2.5	2.208	5.62	27.6	28.16
				Equiv. Refl.: (9,-13,4), (13,-9,4), (-4,13,4), (-9,-4,4), (-13,4,4)					
LiNbO <sub>3</sub>	(4,-13,-4)	16.135	82.28	1.961	2.5	2.208	5.62	27.6	28.16
				Equiv. Refl.: (9,4,-4), (13,-4,-4), (-4,-9,-4), (-9,13,-4), (-13,9,-4)					
LiNbO <sub>3</sub>	(4,9,-2)	16.061	80.52	1.933	2.4	2.718	6.48	33.97	34.59
				Equiv. Refl.: (9,-13,-2), (13,-9,-2), (-4,13,-2), (-9,-4,-2), (-13,4,-2)					
LiNbO <sub>3</sub>	(4,8,14)	15.992	79.15	1.9	2.3	3.121	7.33	39.01	39.69
				Equiv. Refl.: (8,-12,14), (12,-8,14), (-4,12,14), (-8,-4,14), (-12,4,14)					
LiNbO <sub>3</sub>	(1,-10,20)	15.998	79.26	1.886	2.3	3.088	7.06	38.6	39.24
				Equiv. Refl.: (9,1,20), (10,-1,20), (-1,-9,20), (-9,10,20), (-10,9,20)					
LiNbO <sub>3</sub>	(4,-13,2)	16.061	80.52	1.885	2.4	2.718	6.48	33.97	34.59
				Equiv. Refl.: (9,4,2), (13,-4,2), (-4,-9,2), (-9,13,2), (-13,9,2)					
LiNbO <sub>3</sub>	(1,9,-20)	15.998	79.26	1.847	2.3	3.088	7.06	38.6	39.24
				Equiv. Refl.: (9,-10,-20), (10,-9,-20), (-1,10,-20), (-9,-1,-20), (-10,1,-20)					
LiNbO <sub>3</sub>	(0,0,36)	16.098	81.36	1.844	2.2	2.473	5.51	30.92	31.4
LiNbO <sub>3</sub>	(3,9,12)	15.969	78.73	1.834	2.2	3.245	7.1	40.56	41.18
				Equiv. Refl.: (5,-13,0), (8,5,0), (9,-12,12), (12,-9,12), (13,-5,0), (-3,12,12), (-5,-8,0), (-8,13,0), (-9,-3,12) (-12,3,12), (-13,8,0)					
LiNbO <sub>3</sub>	(5,8,0)	15.793	75.91	1.826	2.1	4.088	8.78	51.1	51.85
				Equiv. Refl.: (8,-13,0), (13,-8,0), (-5,13,0), (-8,-5,0), (-13,5,0)					





Ei =	16.283	keV						$\Delta E_g$	$\Delta E_t$
Cryst	Refl	EB	$\Theta B$	$\int IR d\Theta$	Width	$Ei \cot\Theta$	$\Delta E$	2m, 50μm	2m, 50μm
	(h,k,l)	[keV]	[°]	[μrad]	[μrad]	[meV/μrad]	[meV]	[meV]	[meV]
LiNbO <sub>3</sub>	(1,10,-12)	15.602	73.37	1.309	1.6	4.865	7.73	60.81	61.3
				Equiv. Refl.: (10,-11,-12), (11,-10,-12), (-1,11,-12), (-10,-1,-12), (-11,1,-12)					
LiNbO <sub>3</sub>	(2,-12,8)	15.892	77.41	1.305	1.6	3.636	5.98	45.44	45.84
				Equiv. Refl.: (10,2,8), (12,-2,8), (-2,-10,8), (-10,12,8), (-12,10,8)					
Quartz	(8,2,-8)	16.202	84.3	1.3	1.4	1.626	2.31	20.33	20.46
				Equiv. Refl.: (8,-10,8)					
Quartz	(2,8,8)	16.202	84.3	1.299	1.4	1.626	2.3	20.33	20.46
				Equiv. Refl.: (2,-10,-8), (-8,-2,8), (-10,2,8), (-10,8,-8)					
Quartz	(10,-2,-8)	16.202	84.3	1.298	1.4	1.626	2.31	20.33	20.46
				Equiv. Refl.: (10,-8,8), (-2,10,8), (-2,-8,-8), (-8,10,-8)					
LiNbO <sub>3</sub>	(2,10,-2)	15.51	72.27	1.284	1.5	5.206	8.05	65.07	65.57
				Equiv. Refl.: (2,-11,16), (9,2,16), (10,-12,-2), (11,-2,16), (12,-10,-2), (-2,12,-2), (-2,-9,16), (-9,11,16), (-10,-2,-2)					
				(-11,9,16), (-12,2,-2)					
LiNbO <sub>3</sub>	(2,-12,2)	15.51	72.27	1.283	1.5	5.206	8.05	65.07	65.57
				Equiv. Refl.: (10,2,2), (12,-2,2), (-2,-10,2), (-10,12,2), (-12,10,2)					
LiNbO <sub>3</sub>	(3,-12,12)	15.969	78.73	1.282	1.6	3.245	5.33	40.56	40.91
				Equiv. Refl.: (9,3,12), (12,-3,12), (-3,-9,12), (-9,12,12), (-12,9,12)					
LiNbO <sub>3</sub>	(0,-2,-34)	15.456	71.66	1.28	1.5	5.397	8.18	67.46	67.95
				Equiv. Refl.: (2,0,-34), (-2,2,-34)					
LiNbO <sub>3</sub>	(0,-11,-10)	15.936	78.14	1.277	1.7	3.418	5.86	42.73	43.13
				Equiv. Refl.: (11,0,-10), (-11,11,-10)					
LiNbO <sub>3</sub>	(2,9,-16)	15.822	76.33	1.276	1.6	3.959	6.4	49.49	49.9
				Equiv. Refl.: (9,-11,-16), (11,-9,-16), (-2,11,-16), (-9,-2,-16), (-11,2,-16)					
LiNbO <sub>3</sub>	(5,-13,6)	16.019	79.67	1.266	1.7	2.967	4.9	37.09	37.41
				Equiv. Refl.: (8,5,6), (13,-5,6), (-5,-8,6), (-8,13,6), (-13,8,6)					
Sapph	(1,1,33)	15.965	78.65	1.261	1.3	3.268	4.32	40.85	41.07
				Equiv. Refl.: (1,1,-33), (1,-2,33), (1,-2,-33), (2,-1,33), (2,-1,-33), (-1,2,33), (-1,2,-33), (-1,-1,33), (-1,-1,-33)					
				(-2,1,33), (-2,1,-33)					
LiNbO <sub>3</sub>	(4,-9,-26)	15.91	77.71	1.26	1.6	3.548	5.7	44.35	44.71
				Equiv. Refl.: (5,4,-26), (9,-4,-26), (-4,-5,-26), (-5,9,-26), (-9,5,-26)					
LiNbO <sub>3</sub>	(2,10,-8)	15.892	77.41	1.257	1.6	3.636	5.98	45.44	45.84
				Equiv. Refl.: (10,-12,-8), (12,-10,-8), (-2,12,-8), (-10,-2,-8), (-12,2,-8)					
Sapph	(1,5,29)	16.179	83.51	1.254	1.4	1.853	2.6	23.16	23.3
				Equiv. Refl.: (1,-6,-29), (5,1,-29), (5,-6,29), (6,-1,-29), (6,-5,29), (-1,6,29), (-1,-5,-29), (-5,6,-29), (-5,-1,29)					
				(-6,1,29), (-6,5,-29)					
LiNbO <sub>3</sub>	(2,6,26)	15.353	70.54	1.253	1.5	5.752	8.58	71.91	72.42
				Equiv. Refl.: (6,-8,26), (8,-6,26), (-2,8,26), (-6,-2,26), (-8,2,26)					
LiNbO <sub>3</sub>	(0,-4,-32)	15.353	70.54	1.252	1.5	5.754	8.47	71.93	72.42
				Equiv. Refl.: (4,0,-32), (-4,4,-32)					
LiNbO <sub>3</sub>	(2,-8,-26)	15.353	70.54	1.248	1.5	5.752	8.58	71.91	72.42
				Equiv. Refl.: (6,2,-26), (8,-2,-26), (-2,-6,-26), (-6,8,-26), (-8,6,-26)					
LiNbO <sub>3</sub>	(4,-11,-18)	15.64	73.84	1.244	1.5	4.718	7.14	58.97	59.41
				Equiv. Refl.: (7,4,-18), (11,-4,-18), (-4,-7,-18), (-7,11,-18), (-11,7,-18)					
LiNbO <sub>3</sub>	(0,2,34)	15.456	71.66	1.243	1.5	5.397	8.18	67.46	67.95
				Equiv. Refl.: (2,-2,34), (-2,0,34)					
LiNbO <sub>3</sub>	(5,-13,-6)	16.019	79.67	1.228	1.7	2.967	5.12	37.09	37.44
				Equiv. Refl.: (8,5,-6), (13,-5,-6), (-5,-8,-6), (-8,13,-6), (-13,8,-6)					
LiNbO <sub>3</sub>	(1,2,-34)	15.643	73.88	1.213	1.5	4.706	7.07	58.83	59.25
				Equiv. Refl.: (2,-3,-34), (3,-2,-34), (-1,3,-34), (-2,-1,-34), (-3,1,-34)					
LiNbO <sub>3</sub>	(1,-3,34)	15.643	73.88	1.212	1.5	4.706	7.07	58.83	59.25
				Equiv. Refl.: (2,1,34), (3,-1,34), (-1,-2,34), (-2,3,34), (-3,2,34)					



















Ei =	16.283	keV						$\Delta E_g$	$\Delta E_t$
Cryst	Refl	EB	$\Theta B$	$\int IR d\Theta$	Width	$Ei \cot\Theta$	$\Delta E$	2m, 50μm	2m, 50μm
	(h,k,l)	[keV]	[°]	[μrad]	[μrad]	[meV/μrad]	[meV]	[meV]	[meV]
Quartz	(1,8,8)	15.465	71.76	0.235	0.3	5.366	1.54	67.07	67.09
				Equiv. Refl.: (1,10,2), (1,-9,-8), (1,-11,-2), (8,1,-8), (8,-9,8), (10,1,-2), (10,-11,2), (-9,1,8), (-9,8,-8) (-11,1,2), (-11,10,-2)					
Quartz	(7,-2,-11)	15.556	72.81	0.232	0.3	5.037	1.41	62.96	62.97
				Equiv. Refl.: (7,-5,11), (11,-1,-2), (11,-10,2), (-1,11,2), (-1,-10,-2), (-2,7,11), (-10,11,-2), (-10,-1,2)					
Quartz	(-2,-5,-11)	15.556	72.81	0.231	0.3	5.037	1.41	62.96	62.97
				Equiv. Refl.: (-5,7,-11), (-5,-2,11), (-7,2,11)					
Quartz	(2,5,11)	15.556	72.81	0.23	0.3	5.037	1.41	62.96	62.97
				Equiv. Refl.: (2,-7,-11), (5,2,-11), (5,-7,11), (-7,5,-11)					
Quartz	(11,-5,7)	16.051	80.32	0.227	0.3	2.777	0.86	34.71	34.72
				Equiv. Refl.: (11,-6,-7), (-5,11,-7), (-5,-6,7), (-6,11,7), (-6,-5,-7)					
Quartz	(1,10,3)	15.731	75.04	0.225	0.3	4.35	1.22	54.38	54.39
				Equiv. Refl.: (1,-11,-3), (10,1,-3), (10,-11,3), (-11,1,3), (-11,10,-3)					
Quartz	(12,-4,2)	15.589	73.21	0.224	0.3	4.912	1.33	61.41	61.42
				Equiv. Refl.: (12,-8,-2), (-4,12,-2), (-4,-8,2), (-8,12,2), (-8,-4,-2)					
Quartz	(5,6,-7)	16.051	80.32	0.223	0.3	2.777	0.86	34.71	34.72
				Equiv. Refl.: (5,-11,7), (6,5,7), (6,-11,-7), (11,-1,-3), (11,-10,3), (-1,11,3), (-1,-10,-3), (-10,11,-3), (-10,-1,3) (-11,5,-7), (-11,6,7)					
Quartz	(2,4,-12)	15.776	75.67	0.221	0.3	4.16	1.2	52	52.01
				Equiv. Refl.: (2,-6,12), (3,6,-9), (3,-9,9), (4,2,12), (4,-6,-12), (6,3,9), (6,-9,-9), (-6,2,-12), (-6,4,12) (-9,3,-9), (-9,6,9)					
Quartz	(4,8,-2)	15.589	73.21	0.217	0.3	4.912	1.33	61.41	61.42
				Equiv. Refl.: (4,-12,2), (8,4,2), (8,-12,-2), (-12,4,-2), (-12,8,2)					
Quartz	(0,8,-9)	15.57	72.98	0.215	0.3	4.984	1.32	62.29	62.31
				Equiv. Refl.: (0,-8,9), (8,0,9), (-8,0,-9)					
Quartz	(8,-8,-9)	15.57	72.98	0.214	0.3	4.984	1.32	62.29	62.31
				Equiv. Refl.: (-8,8,9)					
Quartz	(9,-3,9)	15.502	72.18	0.209	0.3	5.234	1.38	65.43	65.44
				Equiv. Refl.: (9,-6,-9), (-3,9,-9), (-3,-6,9), (-6,9,9), (-6,-3,-9)					
Sapph	(1,2,-31)	15.322	70.22	0.206	0.3	5.857	1.55	73.21	73.22
				Equiv. Refl.: (1,-3,31), (2,1,31), (2,-3,-31), (3,-1,31), (3,-2,-31), (-1,3,-31), (-1,-2,31), (-2,3,31), (-2,-1,-31) (-3,1,-31), (-3,2,31)					
Quartz	(1,10,-2)	15.521	72.4	0.205	0.2	5.165	1.28	64.57	64.58
				Equiv. Refl.: (1,-11,2), (10,1,2), (10,-11,-2), (-11,1,-2), (-11,10,2)					
Sapph	(2,8,15)	15.536	72.58	0.204	0.3	5.109	1.37	63.86	63.88
				Equiv. Refl.: (2,8,-15), (2,-10,15), (2,-10,-15), (8,2,15), (8,2,-15), (8,-10,15), (8,-10,-15), (10,-2,15), (10,-2,-15) (10,-8,15), (10,-8,-15), (-2,10,15), (-2,10,-15), (-2,-8,15), (-2,-8,-15), (-8,10,15), (-8,10,-15), (-8,-2,15) (-8,-2,-15), (-10,2,15), (-10,2,-15), (-10,8,15), (-10,8,-15)					
Quartz	(1,3,13)	15.81	76.15	0.203	0.3	4.015	1.04	50.18	50.2
				Equiv. Refl.: (1,-4,-13), (3,1,-13), (3,-4,13), (-4,1,13), (-4,3,-13)					
Sapph	(1,2,32)	15.783	75.77	0.201	0.3	4.129	1.15	51.61	51.63
				Equiv. Refl.: (1,10,3), (1,10,-3), (1,-3,-32), (1,-11,3), (1,-11,-3), (2,1,-32), (2,-3,32), (3,-1,-32), (3,-2,32) (10,1,3), (10,1,-3), (10,-11,3), (10,-11,-3), (11,-1,3), (11,-1,-3), (11,-10,3), (11,-10,-3), (-1,3,32) (-1,11,3), (-1,11,-3), (-1,-2,-32), (-1,-10,3), (-1,-10,-3), (-2,3,-32), (-2,-1,32), (-3,1,32), (-3,2,-32) (-10,11,3), (-10,11,-3), (-10,-1,3), (-10,-1,-3), (-11,1,3), (-11,1,-3), (-11,-10,3), (-11,-10,-3)					
Quartz	(3,8,6)	15.915	77.79	0.199	0.3	3.524	0.92	44.04	44.05
				Equiv. Refl.: (3,-11,-6)					
Quartz	(8,3,-6)	15.915	77.79	0.198	0.3	3.524	0.92	44.04	44.05
				Equiv. Refl.: (8,-11,6), (-11,3,6), (-11,8,-6)					







